The Conservative Management of Neck Injuries

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■ *Previously a list of treatments which might be avoided in the care of simple neck sprains was published. The present discussion is with regard to treatment which may be used safely.*

The original discussion was to the effect that treatment should be avoided which aggravates the patient's pain.

Now suggestions are made for treatment which should not produce iatrogenic trauma.

This treatment has the advantage of reducing the financial cost to the injured person plus the medical advantage of shortening the period of treatment, reducing cost and disability.

IT IS NOTEWORTHY that in a symposium on "Disorders of the Cervical Spine" published in *Clinical Orthopaedics* there are 18 authors and 18 opinions.[3] It should also be observed that there are as many as 38 theories as to the cause of the bizarre symptoms, even including psychosis, that sometimes follow soft tissue injuries of the neck. It is noted, however, that no author mentions injury produced by treatment.

When soft tissue injuries of the neck are attributed to culpability of a third party—in reports such as "hit my rear bumper," or "ran a stoplight," or "slipped on a piece of lettuce on the supermarket floor"—the patient is plunged immediately into the emotional maelstrom of litigation in addition to whatever physical injury he may have received.

In a previous discussion of this subject, I expressed belief that the great majority of such neck injuries are simple sprains which might be treated as any other sprain is treated. It was noted in a review of the histories of these patients that the use of heat, especially of diathermy, may cause the pain related to sprain to continue more or less indefinitely. Sugar[7] recently published a statement that heat could enhance the relief obtained by the use of analgesic drugs, but he added the surprising observation that "diathermy appears to be the worst type of heat since it is apt to aggravate the pain." I can add from the histories of my own patients that this aggravation is possible even in the patient who sleeps on an electric pad, frequently without the knowledge of his physician.

I also noted in a previous discussion that in middle-aged persons in whom degenerative change of the midcervical region is already apparent, the constant use of diathermy in that area may have a crippling effect even in the absence of neck injury. Rowe[5,6] also recently observed this phenomenon.

Another observation was that among more than one thousand patients it was consistently noted that in unusually violent accidents involving major fractures or dislocations, injury to the neck was not reported by the patient and rarely mentioned by the physician, although neck injury surely must have occurred in some of those cases. This means that recovery from neck injury must have taken place without the patient's having any recollection of injury there.

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Since 1958 I have had opportunity to take extended histories and do examinations on 1,455 patients who have suffered injuries. Most of these patients had neck injuries although many were not aware that they had. Evidence of neck injury, however, was apparent to the examiner either in history or in physical findings.

These patients came from all parts of the western United States and from many of the eastern and middle western states. A common denominator in these cases was the faith of the patient and his physician in the use of diathermy, ultrasound therapy, heavy traction and rigid cervical collars. This faith is apparently widespread in the United States, for among the patients with neck injuries few had consulted an orthopedist until after a month or so of treatment by some other physician. In a few instances, orthopedists whose practice was in an emergency hospital or to whom injured persons were referred directly by attorneys, were consulted early.

Often the failure to obtain relief of symptoms by the physical therapy methods mentioned is attributed to undertreatment, with the result that the physician may recommend switching from three treatments weekly in the office to daily treatment in a hospital —perhaps twice daily when symptoms do not abate. As pain increases with what is called "intensive treatment" there are two courses that may be considered by the bewildered patient and physician. One is referral to someone for surgical operation; the other is the remote possibility that the patient may, against advice, quit taking the treatments.

Having had four major neck injuries myself which have so far caused me to lose one hour of work, but have required no treatment, I believe I can add something to our knowledge of injury of this type. We should all know that these sprains heal with a slight reduction in motion of which the patient is unaware. There is no pain after recovery seems complete.

Such limitation of motion may be iatrogenic. I have encountered two patients whose history was to the effect that they had had no neck pain at any time. Both had been placed in rigid cervical collars by their physicians because of the fact that the accident in which the injury was claimed involved a collision with a rear bumper. The two patients, one after seven months and the other after 18 months of rigid fixation, had no practical neck motion. Their histories, however, stated that they had had no neck pain at any time.

The hard collars in common use at the present time are admittedly time-saving and are frequently prescribed for 24-hour splinting of the neck. It has been noted consistently that patients wearing them found they were unable to lie down because to do so aggravated the neck pain. This is because recumbency adds traction to the sprained neck due to elevation of the shoulder girdle. Hence they removed the collar or slept sitting up.

I do not believe any of us would attach a traction apparatus to a sprained ankle in which we suspected ligamentous tears until these tears had had an opportunity to heal. After healing, any form of physiotherapy which will encourage active motion of the injured ankle is an acceptable treatment. It has been interesting to find how commonly fresh neck sprains are placed in motorized traction or traction with heavy weights. When patients were questioned about the effect of this treatment, almost invariably they said that the traction aggravated the pain but that they had been encouraged to continue with the traction with the idea that someday it would not be so painful. As a rule this ultimately proved to be true.

With our experience with rest as the primary treatment, followed by active motion, it has been found that the original rest treatment must be accomplished by some means which is sufficiently comfortable to permit continued rest to the sprain for 24 hours a day. Probably the simplest form of rest is bed rest with traction of about four pounds—a weight less than one-third the weight of the head. In a bed with the headrest slightly elevated, such a weight does not put any traction on the neck but it does provide a simple and comfortable way to protect it from sudden unguarded motion. This weight will not cause synovitis of the joints of the jaw. Most persons are able to learn to sleep in traction of this type, and many are able to carry on treatment at home.

The most effective ambulatory treatment has been use of the large, firm mattressed collar described by Schanz in 1908. This device has probably been made more usable by the cotton collar which was introduced by Lewin and is most recently illustrated in the text "Treatment of Injuries to Athletes" by O'Donoghue.[4] Now in the form of a long bandage of quilted flannel, the collar can be applied quite easily and it is sufficiently firm to support the weight of the head, yet soft enough to permit slight movement. Since it acts as a neck pillow when the patient lies down, it does not disturb sleep. It also has the advantage of retaining body heat which is an optimum form of heat therapy.

As the collar rests the muscles of the neck, the pain of simple sprains will ordinarily subside in three or four weeks.

Following removal of the collar or traction or transition from traction to collar and then to freedom of motion, treatment consists largely of encouraging the patient to keep working at active motion

of the neck, always cautioning that the motion be done within the painless range, a range that only the patient can determine.

Such a program of treatment usually will result in subjective recovery within a period of three months. If not, the injury may be of a more severe order, perhaps requiring surgical treatment.

It should be apparent at once that the simple program outlined has the distinct advantage that it puts the patient to practically no expense.

One of the most intelligent of pioneers in anterior cervical fusion in the west recently stated that "surgery should be delayed for at least a year because in many cases there is a remission after conservative treatment has failed."[2] I believe that he might also have said, as an alternative, "after conservative treatment has been stopped."

There is one additional little known observation which should be of importance. In examining families who have been involved in rear-end collisions, it is quite common that the adults have complaint of pain and the children are not considered injured. In two families I have observed three children whose parents had symptoms but who themselves had normal neck motion and no complaints. In all three children a reversal of the cervical lordosis was noted. As was stated in a previous communication,[1] the straight cervical spine can be a normal physiologic finding. However, reversed cervical lordosis requires some definite explanation. In these three children the reversal was present a year after an accident in which none of the three had ever been suspected of having been injured.

My point is not to disparage "unnecessary" treatment, for to many a patient the fact of having seen a doctor who listens patiently, understands and administers medication or some form of encouragement is worthwhile. My purpose is to warn against treatment which may do harm.

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